Railway construction as viewed from local society

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RAILWAY CONSTRUCTION AS VIEWED FROM LOCAL SOCIETY

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INTRODUCTION

The formation of Japan's rail network has often in the past been analyzed from a macro-economic perspective, considering transportation policy as an accompaniment to Japan's modernization. Research on the main trunk has produced many interesting results, but we cannot say that we yet know enough about the nature of the more local lines. In other words, we do not know enough about how, in the course of Japan's modernization, local communities accepted and came to live in close association with these local lines.

In the present study I should like to look at the ways in which Japan's rail network was formed. We shall look at the process of its expansion, at the ways in which local communities reacted to the central government's railway policies, and the efforts made by people in the local areas to promote railway construction.

First we shall look at the period beginning around 1890 when local communities began actively to invite new railway construction. We shall then look at subsequent periods until around 1920 against the background of changes in government railway policies. Several concrete examples will be discussed for each period in order to show the ways in which local communities worked to attract new railroads.

The present study summarizes and in some cases elaborates on research which the author has already published, including:

- Nihon no tetsudō, hyakunen no ayumi kara [Japan's Railroads Through 100 Years of Development], co-authored by Harada Katsumasa (Sanseidō, 1973).
- "Fujisan o meguru kōtsūmō no keisei" [Formation of the Rail Network

around Mount Fuji] in Fuji sanrokushi [History of the Area around the Base of Mount Fuji], Kodama Kōta, ed., published by the Fuji Kyūkō Company in commemoration of the fiftieth year of its founding (1977).

— "Rōkaru sen kensetsu no rekishi to sono seijiteki igi" [History of the Construction of Local Lines and its Political Significance], in Tetsudō Pictorial, 220 (1969).

— "Shimotsui Tetsudō no seiritsu to sono seikaku" [Formation and Character of the Shimotsui Railway], in Chihōshi Kenkyū, 97 (1969).

— "Kinsei minatomachi Tomo oyobi Shimotsui ni okeru tetsudō kōtsū no dōnyū to sono tokushitsu" [The Introduction and Characteristics of Rail Transport in the Modern Ports of Tomo and Shimotsui], in Tōhoku Chiri, 21-23 (1969).

— "Daiichiji sangyō chiiki ni okeru kyokuchi tetsudō no kensetsu — jinushi kin'yū shihon no yakuwari o chūshin to shite" [The Building of Local Railways in First-Phase Industrial Zones and the Role of Landowner Finance Capital in Particular], in Rekishi Chirigaku Kiyō, 11 (1969).

— "Chūō-sen no kensetsu to sono rūto o megutte" [On the Construction and Routing of the Chūō Line], in Tetsudō Pictorial, 280 (1973).

— "Tōnō chihō ni okeru tetsudōmō no keisei" [Formation of the Rail Network in the Tōnō Region], in Tokyo Gakugei Daigaku Kiyō (Daisan Bumon Shakaigaku), 28 (1977).

I. CHANGES IN RAILWAY POLICY AND THE RESPONSE OF LOCAL COMMUNITIES

Generally apeaking, patterns of railway construction were determined by government policies and changes in those policies. It was from the latter part of the 1880s that local communities throughout Japan began actively to work to promote the building of railways. Afterwards, in the period before World War I, the following sorts of changes may be seen in the ways in which local communities worked at railway promotion.

First Period (approximately 1887 to 1907)

This was a period characterized mainly by the construction of trunk lines. During this period it was not uncommon for local communities to raise their own funds to build private rail lines. However, the number of such plans which resulted in the actual opening of new lines was small. The reason for these failures was that capital accumulation in the various local communities was not sufficient. With the exception of "light railways" (keiben tetsudō) and rails for vehicles pulled by men or horses, it was often beyond the capacity of local communities to carry out the construction of regular railways, which required enormous emounts of capital.

At times when trunk line routes were being decided, local communities very often exerted efforts to get these routes planned in such a way as would benefit their own regions. Such movements became especially active after the promulgation of the Railway Construction Law in 1892, according to which plans for Japan's trunk line network were to be devised in such a way as would reflect local sentiment through Japan's

national parliament (first opened in 1890), the Imperial Diet.

Second Period (approximately 1907 to 1922)

This was a period which saw the construction of "light railways" widely carried out through local communities' own efforts. During this period, local societies pulled together their own capital and were relatively successful in their efforts to build privately operated lines of a fairly simple construction, which acted as feeder lines to the main trunk lines. The building of such feeder lines was aided by government policy, notably the promulgation in 1910 of the Keiben Tetsudōhō [Light Railway Law] by which government supervision and control over private lines were greatly relaxed. Such construction was also aided by the promulgation in 1911 of the Keibin Tetsudō Hojohō [Light Railway Subsidy Law], by which subsidies were provided to feeder lines whose economic performance was poor. As a result of these laws, a large number of feeder lines were constructed, and the majority were built with capital raised within local communities and invested by persons from a range of social classes, including many with only very small amounts to invest.

Third Period (approximately 1922 to present)

This was a period in which local lines were built as the result of government response to requests made to the administrative authorities directly concerned with nationally owned railways. After 1911 the government, under the rubric of "light railways," had already undertaken the construction of certain local lines which fell outside the scope of the plan for the national trunk line network envisaged in the Railway Construction Law. Such lines were often called "political lines" because route decisions were made as the result of political negotiation. However, policies whereby the government would undertake the construction of local lines were not thoroughly pursued until 1922, when the Railway Construction Law was revised. After that time,

the national railway administration adopted a clear and active policy of building local lines, while local communities gave up the practice of promoting, through their own resources, the building of "light railways" (whose profitability was typically low) and instead came to demand, through the Diet, the construction of nationally owned local lines.

In this way, local communities were freed from having to raise huge amounts of capital as well as unpleasant business losses, since these burdens were wholly transferred to the government. Plans for local railway construction became linked with the campaigns of members of and those aspiring to be members of the Diet. "Political lines" expanded rapidly, and even today, when the development of automobile and truck transport has largely done away with the raison d'être of rail lines with low transport demand, railway construction remains active.

II. RAILWAY CONSTRUCTION AND LOCAL COMMUNITIES IN THE MID-MEIJI ERA

The Significance of the Railway Construction Law

On 1 July 1889, with the completion of the stretch of line between Baba (present-day Zeze), Maibara and Nagahama, and with the opening of the stretch of line between Fukaya and Maibara (change of route between Nagahama and Fukaya), the entire length of the Tōkaidō Line between Shinbashi and Kobe was opened to traffic. The Meiji government's long-held dream of linking the capital, Tokyo, with the Kyoto-Osaka area by rail was thus brought to fruition.

Around the same time, in more northerly parts of Japan, a new Nippon Tetsudō line was opened between Sendai and Kamaishi, and the government-operated Naoetsu Line, linking with the line between Ōmiya and Takasaki, was completed except for the stretch between Yokogawa and Karuizawa, where construction was difficult due to the mountainous terrain around the Usui pass. In the western part of Japan, the building of the San'yōdō was well underway, and the stretch between Kyōgo and Himeji was opened. Among the private lines in various parts of Japan which had begun operation, we may mention the Mito Line, the Ryōmō Line, the Kōbu Line, the Osaka Line, and the Hankai Line.

On the southern island of Kyushu, lines were under construction but none had been opened as of July 1889. On the northern island of Hokkaido, the Horonai Line had begun operation, and on the island of Shikoku the Sanuki Line and the Iyo Line had opened to traffic.

On 10 July 1889, about 100 people connected with railways in different parts of the country attended a "Thousand Kilometres of Railways

Congratulatory Party" held in Nagoya to fete the growth of Japan's rail network.

However, in spite of this extension of the rail network, the Japanese government had not yet set any definite policy for its future. In 1890, what might be called Japan's first modern "economic depression" began, and the private railway companies were not spared from the slump. Pressed by these conditions, Inoue Masaru, head of the government Railway Bureau, offered the government some items of advice under the title "Considerations on Railway Strategy." Inoue Masaru held the highest position in the Railway Bureau between 1871 and 1893 (except for one period of resignation). He was a consistent advocate of government ownership.

The above-mentioned "Considerations" were presented to the government in July 1891. They were rather lengthy, but essentially made two points. First, it would be necessary for Japan to decide upon its future trunk routes, and for this purpose the government should set up a long-range plan and establish laws to enable steady construction work, as well as laws providing for the issue of public bonds to raise the needed funds. Second, the government should purchase private lines which would form part of the trunk-line network.

On the basis of Inoue's suggestion, the government in December 1891 introduced, to the lower house of the Diet, bills providing respectively for railway bonds and for purchasing private lines. The latter was rejected, while the former was still pending when the Diet session was brought to a close. Bills of both types were reintroduced in May 1892 in the newly elected Diet. Various members of the lower house introduced their own bills, under such names as "bill for railway extension" or "bill for railway construction" with the aim of promoting the building of new railways in various parts of the country. The bill presented by the government was adapted to reflect various points of these individually presented bills and, as a result, the Railway Construction Law (Law No. 4) was promulgated on 21 June 1892.

This law was decisive in Japan's railway history because it set the pattern for the country's future trunk line network and placed the government's previous arbitrary rail construction policies under the control of the Diet, which would thereafter have an important voice in determining long-range plans. Article 2 of the Railway Construction Law provided for lines planned for future construction, while Article 7 provided for lines for which appropriations had already been made and on which construction could begin immediately (i.e. so-called "first-phase railways"). In the case of adding new projected lines or elevating projected lines to the status of "first-phase railways," amendments to the law were needed. The government would use the Tetsudō Kaigi [Railway Committee] as an advisory body and would have to obtain Diet approval of any amendments or revisions which it might wish to introduce.

The Railway Committee consisted of members of the Diet, Army and Navy officers, and high-ranking officials of the Railway Bureau and other related government agencies. It had a chairman, 20 regular members, and several ad hoc members. It had a wide-ranging jurisdiction, including, in addition to matters concerning the Railway Construction Law, budgets for construction, methods of purchasing private lines, traffic scheduling, and fares. Arbitrary planning by top government officials (ministers, etc.) or by the Railway Bureau thus became impossible. With the establishment of the Railway Committee, plans were made and carried out according to certain established rules and reflected a certain degree of "popular opinion."

The largest part of what is today considered Japan's trunk-line network was constructed in accordance with the above-mentioned Railway Construction Law. Until the law was revised in 1922, the "projected lines" given in Article 2 were as shown in Figure 1.

However, the Railway Construction Law was unable to effect the purchase of private lines. Article 1 was entitled "Liquidation of Private Railways" and Article 11 provided that when it judged it necessary, the government could purchase private lines, after gaining

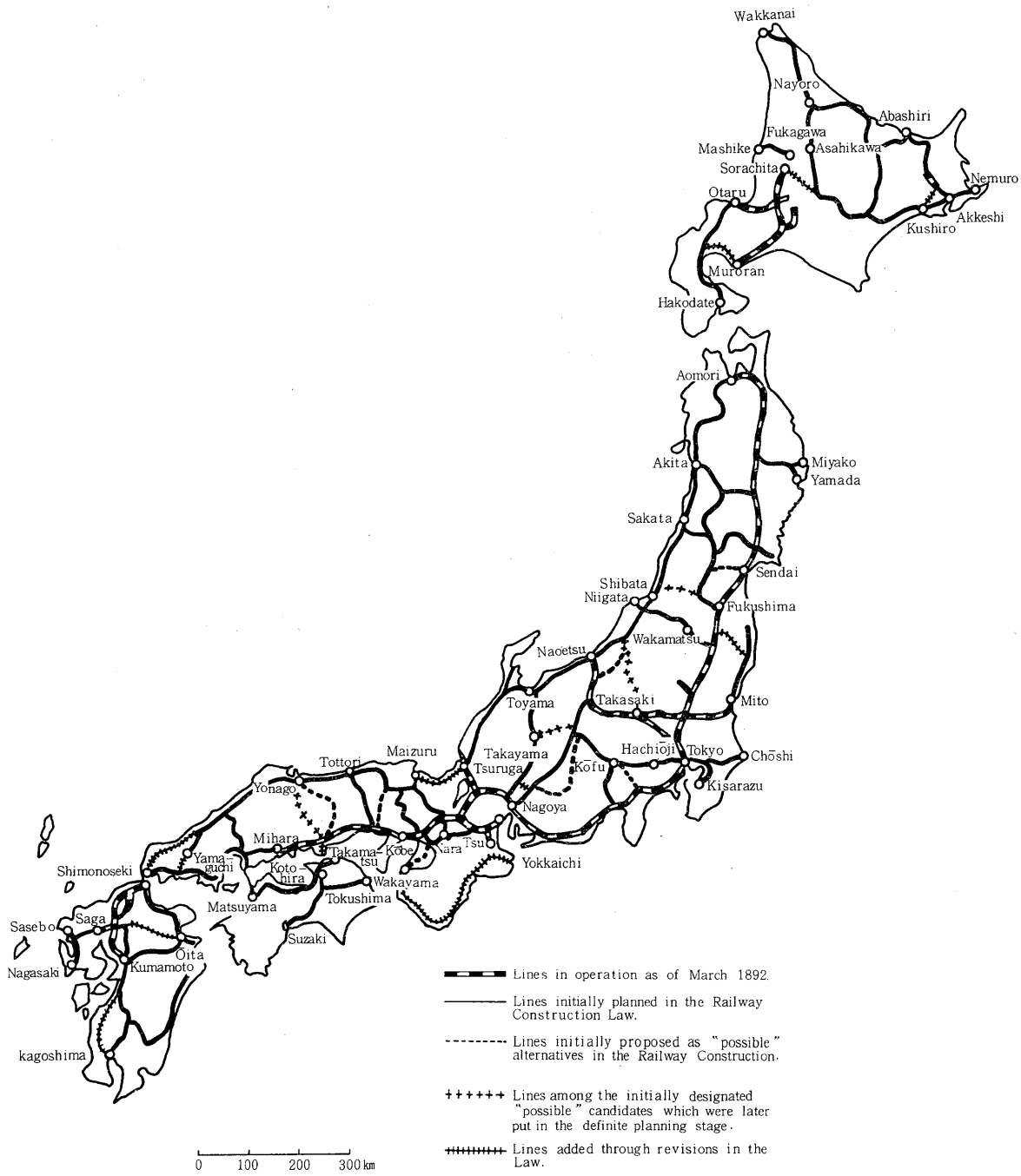

FIG. 1.

Planned Lines under the Railway Construction Law (1892) and the Hokkaido Railway Construction Law (1896).

approval from the Diet and "provisionally establishing a price in consultation with the companies" in question. On the other hand, the following statement appeared in Article 14: "With respect to parts of the planned rail routes where construction has not yet commenced, if a representative of private railway companies should request permission for construction, such permission shall be made possible, through the approval of the Imperial Diet." Thus not only did the law as a whole lack force with respect to stipulating the purchase of private lines, but the very language of the law confirmed a policy whereby the trunk-line network was operated concurrently by both public and private enterprises. Railway construction on the island of Hokkaido was made an exception to the provisions of the 1892 Railway Construction Law, and a separate Hokkaido Railway Construction Law was promulgated in 1896.

Local Communities and the Building of the Chūō Line

In accordance with the Railway Construction Law, among those lines designated for the "first phase," three lines were designated for immediate survey and construction work. These were the Ōu Line at the northern end of Honshu, the Hokuriku Line along part of the Japan Sea coast, and the Chūō (Central) Line.

If we consider the promulgation of the Railway Construction Law and the new rules for railway building from the point of view of local communities, we can understand the very great efforts of those communities to have the new routes planned so as to bring them maximum benefit. The above-mentioned Railway Committee was entrusted with decisions as to routes and order of work on those lines whose construction was designated by law. Heated debates on such matters took place in the Diet. As one might expect, local communities near the proposed routes of the new lines inundated members of the Diet and Railway Committee with all sorts of petitions and opinions.

Here we shall discuss the case of the Chūō (Central) Line, the routing

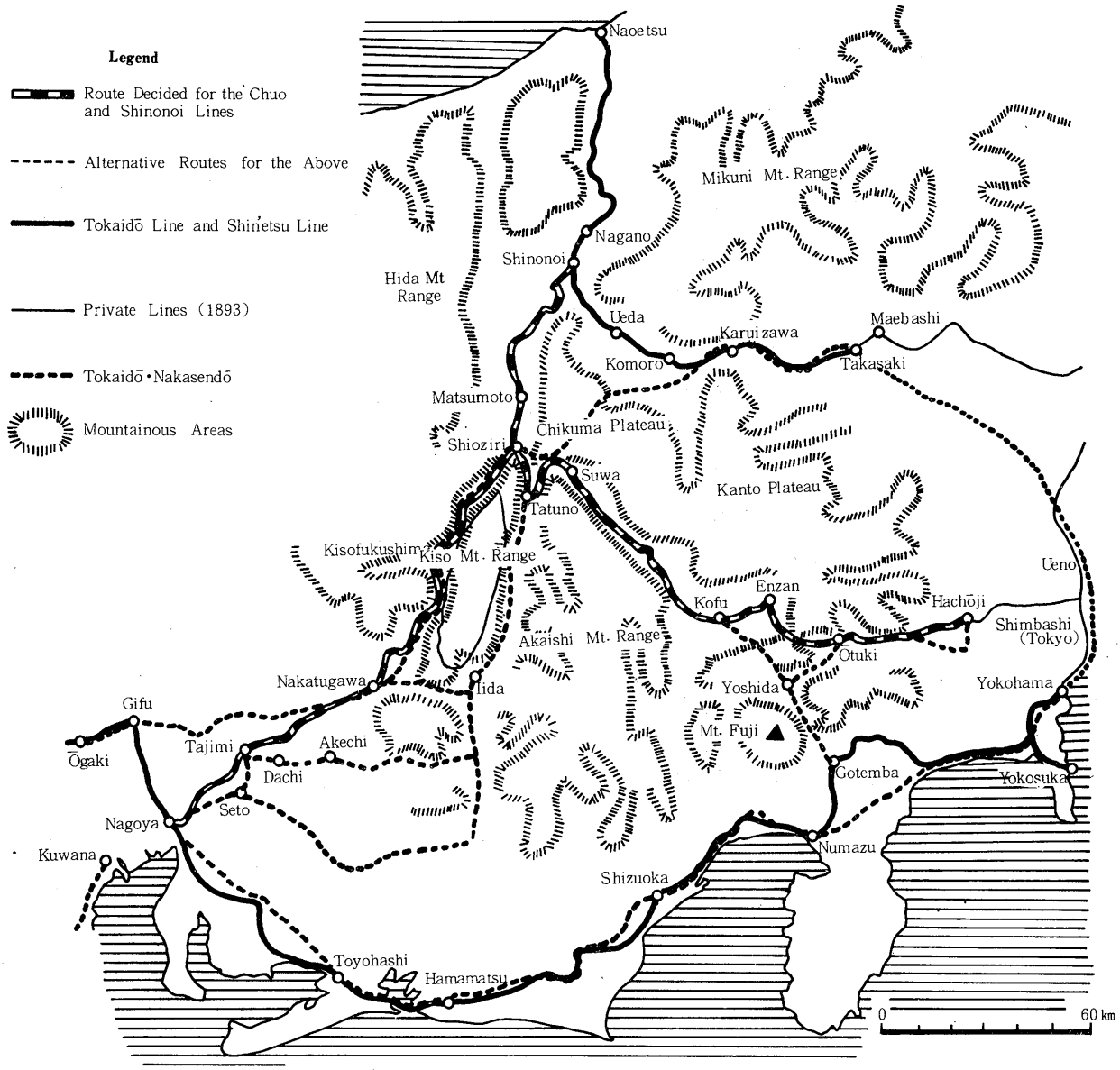

FIG. 2. Alternative Routes for the Construction of the Chūō Line

of which stirred spirited activity as illustrated by a number of interesting episodes.

Even before the promulgation of the Railway Construction Law, the need for building the Chūō Line west from the capital region had been strongly advocated, especially by the Japanese Army. At the time, the Army held the opinion that it would be disadvantageous from the point of view of national defence to build a westward-leading railroad next to the seacoast. The Army at the time visualized a hypothetical conflict in which foreign troop aggressors landing on Japanese soil would be repulsed by action within the country. If a strong and hostile foreign fleet should gain control of access to the sea, cruising freely along the coast, railroads built near the coast could be easily destroyed. Because Japanese troop movements could not in such an eventuality be made quickly, it was proposed to construct rail routes as far from the coast as possible. In 1888 the Army division of the general staff published a book entitled Tetsudōron [On Railways] which expressed the Army's thinking on railways and their military uses. One chapter is entitled "A Rail Line Traversing the Central Part of the Interior of Honshu," and in it the need for such a line is forcefully argued. The Army's advocacy of the Chūō Line was thus very influential and it also gave encouragement to the people living in the central mountain and plateau lands who wanted to be connected to the capital by rail.

Selection of the Chūō Line route gave rise to numerous debates and manoeuvres aimed at influencing decisions in one way or another. For the Chūō Line, the text of the Railway Construction Law suggested not just one route but provided for branch routes and a good deal of flexibility in the selection process. Possibilities were roughly defined as follows:

1. A line from Hachiōji (present-day Tokyo-to, then part of Kanagawa-ken) or Gotemba (Shizuoka-ken) to Kōfu (Yamanashi-ken) and then via Suwa (Nagano-ken) to Ina-gun or Nishichikuma-gun, and thence to Nagoya (Aichi-ken).
2. A line from Nagano city or Shinonoi through Matsumoto to link up

with the above route.

3. A line from Kōfu to Iwabuchi (Shizuoka-ken).

These three routes, roughly speaking, correspond to what are today known as the Chūō, Shinonoi, and Minobu Lines respectively. Only the first of the above routes was initially designated for the "first phase." As may be seen from the above-quoted designation in the Railway Construction Law, the scope of choice was quite wide. The starting point could be either Hachiōji (the end point of the Kōbu Line) or Gotemba (on the Tōkaidō Line), while routing of the middle sections allowed a choice between the Ina valley and the valleys formed by the Narai and Kiso rivers. There was a great number of possibilities for the selection of precise routing on a still more local scale. In this way, then, local communities came to be involved, through petitions and written opinions, in energetic movements to attract rail construction in ways that would be beneficial to them.

Many such petitions and written opinions addressed to the Diet or the Railway Committee are extant. All writers of such documents attempted to make the same point — namely, that the building of railway lines through their own local communities would be both worthwhile and necessary — in an objective or at least supposedly objective way. They refer to the relative ease or difficulty involved in one route as against another due to the terrain, the advantages to be had from easier connections with large cities like Nagoya, Tokyo, or Yokoyama; the future prospects for industry along the proposed routes; traditional transport and trade routes; or the military advantages of routes as far as possible from the coast.

For example, an organization known as the Chūō Tetsudōkai, which campaigned to have Hachiōji made the starting point, produced a petition in December 1892 entitled "The Need for a Central Railway from Hachiōji through Ina to Nagoya" which was signed by ten people from four prefectures (ken). This petition emphasized the following points: (1) the distance between Tokyo and Kōfu would be shorter than via Gotemba; (2) the defence advantage of distance from the coast;

(3) passage through a region of flourishing economic activity;
(4) relative ease of construction due to topographical conditions; and
(5) relative absence of seasonal impediments.

Representing quite an opposite viewpoint, a petition entitled "Opinion on a Gotemba Route for the First Phase Chūō Line" was presented to both houses of the Diet in November 1892, signed by "members of Shizuoka-ken Tōshun Izu Yūshisha," a society of "volunteers" from Shizuoka prefecture campaigning on the railway issue. Their petition stresses the large volume of daily necessities transported to the Kōfu basin from the direction of Numazu (on the coast of Shizuoka-ken) via Gotemba and Yoshida, as well as the long-standing nature of the trade route in question.

On the other hand, persons associated with the spinning industry in the Kōfu, Suwa, and Ina basins founded an association known as the Chūō Ṫetsudō Kisei Kenshigyō Rengōkai [Silk Industry Federation for the Establishment of the Chūō Line] which concluded that the route should be laid to connect their various regions with a starting point in Hachiōji. Pottery manufacturers in the Seto and Tōnō regions argued for a route that would link their business and related trade to Nagoya via Seto, Sasahara and Dachi, holding that a route which did not pass through the centre of pottery and ceramics manufacture would be quite meaningless. It was strongly argued by each group of petitioners, with a sense of self-pride, that their own industries were the most important in Japan.

Of course it is doubtful that the leaders of the local communities had sufficient basic knowledge about railways, and there are not a few cases in which rather questionable discourses on railways are confidently presented in order to emphasize the advantages of one area, often in conjunction with an unjustly low evaluation of competitors' home areas. But it is beyond doubt that all the local community leaders were well aware that the success or failure of their efforts to invite railway construction would have a great economic impact on local society. Often rather insensitive to the question of means — if

need be, bragging about their own communities while greatly exaggerating the weaknesses of their competitors' — these local leaders were intent on publicizing their causes and on bombarding the officials concerned with written documents. In this sense, the selection of the Chūō Line route may have occasioned the first instance of serious attention being given to the relationship between railways and local communities over a wide area.

In February 1893 the Railway Committee decided that the Chūō route would start at Hachiōji and pass through Kōfu, Suwa and Nishichikuma-gun. It is not clear what sort of influence the large number of petitions may have had on the members of the Committee. It appears that in the actual process of selection the most important factor was to keep the grade elevation at no more than 1/40 or 2.5 per cent. At a time when the technology of excavating and building bridges was still not well developed, the influence of topographical factors was very much greater than in the case of present-day railway construction, and it is probably quite natural that a route should be chosen so that the number and length of tunnels and bridges could be kept to a minimum and river valleys could be followed as much as possible in mountainous terrain. It is thought that the main reason that alternative plans — for beginning the line in Gotemba or passing through the Seto or Ina valleys — were not adopted was the steep grades which would have been needed on these routes.

The decision on the routing of the Chūō Line and the line's subsequent opening indeed greatly affected the fortunes of the various local communities. The position of the spinning industry in the Suwa region became more stable, while industries in the Ina region, which failed to attract the railway, for a long time were destined to relative stagnation. In the Tōnō region, where the rail line followed the river Toki, the town of Tajimi, located along the route, developed rapidly as a centre for pottery manufacture and wholesale trade, but Dachi, Oroshi and Kasahara, which were not on the route, were put in a disadvantageous position. Yamanashi prefecture, which had previously depended on trade routes from Shizuoka prefecture for

bringing in daily necessities, virtually cut off this trade relationship after the opening of the Chūō Line and became much more closely linked with Tokyo.

Railway Construction by Local Communities Themselves

In the two decades after the late 1880s, not only did the construction of national rail lines with government funds make steady and systematic progress, but the building of private lines with private capital was also actively pursued. The government issued a Private Railways Ordinance in May 1887. Private railways for steam locomotives were built and operated according to this law, which required the same standards of construction, operation and safety as in the case of government lines. Private lines, which were built for the most part over existing roadways and whose building and safety supervision were relatively simple, were called Kidō [tramways], and a special ordinance for such lines was promulgated in August 1890. These tramways were supervised by the Interior Ministry and at first consisted mainly of rails for horse-drawn vehicles.

Let us now ask how funds were raised for the construction of the privately operated lines. In the case of railways for steam locomotives, which required large amounts of capital, the strength of zaibatsu business groups and commercial capitalists in the big cities made them most important in the procurement of funds and there was relatively little participation by local capitalists.

However, in certain areas, in response to the development of local industries and the expansion of markets, railways came into being which were to a certain extent based on the economic power of local communities. Let us here consider the case of the private Ryōmō Line, which is perhaps the most prominent early example of such a railway.

The Ryōmō Line was built in a silk weaving area in Ibaragi and Gunma prefectures which was left out of the plans for government railway

construction. It ran between the cities of Maebashi and Oyama and was built through the efforts of the cities and towns through which it passed, including Sano, Ashikaga, Kiryū, and Isezaki. The railway company was formed in 1886 and tracks were opened during 1888-89.

The operators of the Ryōmō Line considered the line to be a means of fostering the textile industry. The importance placed on the connection between the railroad and the textile industry is demonstrated by the fact that the economic affairs publicist Taguchi Ukichi, who was the company's first president, compared in public speeches the districts through which the line ran to the textile centre of Manchester in England, while comparing the Ryōmō Line to the Liverpool and Manchester Railway.

It is worthy of note that although the Ryōmō Line was a local line and only 84 kilometres in length, shareholders in the company were distributed over almost the entire country. Of the 30,000 shares issued, holders in Tokyo prefecture accounted for 39 per cent, followed by Niigata prefecture (23 per cent), Wakayama prefecture (13 per cent), Ibaragi prefecture (12 per cent), and Gumma prefecture (6 per cent). The fact that such a large portion of the capital came from outside the two prefectures where the line was located reflects the high expectations of capitalists in other parts of Japan who at the time saw investment in railways as a profitable venture. But the greatest reason was no doubt the relatively low investment capacity of the region through which the line ran.

The major shareholders in the Ryōmō Line were bankers in Tokyo and other areas. Local shareholders were mainly middlemen in the textile distribution trade but, in comparison with the bankers, the number of their shares was relatively small. In addition, large numbers of relatively small investors from various parts of Japan bought shares, spurred by "investment fever."

At the same time, the local textile manufacturers themselves were mainly very small enterprises subordinate to commercial capital and

they did not play an important role in railway investment. It was rather the textile middlemen, representing commercial capital, who were the first to profit from modernization of the transport system.

In 1890, not long after the start of operations, the Ryōmō Line underwent an economic slump, and profits thereafter fell far below original expectations. Since the line was so situated as to be only a feeder line to the private Nippon Tetsudō, debates were held among the shareholders as to whether an extension of the private line should be made to Tokyo, or whether, alternatively, the Ryōmō Line should attempt to sell its stocks and merge with Nippon Tetsudō. There was a fast turnover among shareholders. The lines' managerial policies were largely debated in places rather distant from the textile centres along the line itself and finally, in 1897, the line was bought up by Nippon Tetsudō.*

In the Chikuhō coal fields in northern Kyushu, the Chikuhō Kōgyō Line was opened in 1891 at the initiative of local entrepreneurs interested in coal and sulphur. The Chikuhō Line — the name was shortened in 1894 — eventually came to run between Wakamatsu (a part of present-day Kitakyushu city) and Iizuka, with numerous branches. During the construction stage, the company's managers were pressed by the need to increase their capital and came to rely on the Mitsubishi zaibatsu [business and banking conglomerate] for nearly 50 per cent of the funding. In 1897 the Chikuhō Line merged with Kyushu Tetsudō, a line in which the Mitsubishi group was the largest shareholder.

At this time, capital accumulation in local communities outside the big cities was still insufficient, and in cases of medium- or large-scale railway construction plans (such as the Ryōmō and Chikuhō Lines),

* The main sources of reference on the Ryōmō Tetsudō are Ishii Tsuneo, "Ryōmō Tetsudō Kaisha ni okeru kabunushi to sono keifu" [Stockholders in the Ryōmō Tetsudō Company and Their Affiliations] in Meiji Daigaku Shōgaku Ronsō 41-9-10 (1958), pp. 785-808, and ibid., "Ryōmō Tetsudō Kaisha no keieishiteki kenkyū" [Studies in the Management of the Ryōmō Tetsudō Company], in Meiji Daigaku Shōgaku Kenkyūjo Nenpō, 4 (1959), pp. 161-207.

capital necessarily had to be brought in from the "central financial circles" in the Tokyo-Yokohama or the Kyoto-Osaka-Kōbe regions. In this respect, local capitalists were in a weak position, and therein we see a major reason for the insufficient development of railways which were self-supported through local initiative.

However, it was sometimes possible for local communities to undertake, with their own resources, the construction of relatively short railways. An example is the Iyo Railway, which was opened in October 1888, over a distance of approximately seven kilometres, to link the city of Matsuyama with the port of Mitsu. The earliest rail line on the island of Shikoku, this was the first railway in Japan to adopt a very narrow gauge (distance between rails) of 2 feet 6 inches (762 mm). Kobayashi Nobuchika, who was the main promoter of the Iyo Railway, made various studies on the possibility of building a simple and cheap railroad and in the process came to learn about the Decauville-type narrow-gauge railways whose introduction was being considered by the Interior Ministry, and also came to learn about the Kleinbahn (small) lines in Germany. By adopting similar construction methods, he succeeded in building the Iyo Railway with a capital investment of only 40,000 yen. During the 1890s, five other 2'6"-gauge lines were built in Japan, namely the Ōme Railway (opened in 1894), the Dōgo Railway (1895), the Nan'yo Railway (1896), the Kōzuke Railway (1897), and the Ryūgasaki Railway (1897).

Rail lines for vehicles pulled by horses or people used even simpler construction techniques. Such rails were often laid on city streets to meet urban transportation needs. And in areas lying off the trunk rail lines, it was not uncommon to see rural stations built for such lines, which at one time came to be quite widely adopted as small-scale local means of transporting both passengers and certain types of goods. Such lines for horse-pulled vehicles (basha-tetsudō) and for human-pulled vehicles (jinsha-tetsudō) required much less capital than rails for steam locomotives and thus could be relatively easily built by local communities with very limited capital. Such lines were not legally classified as "railways" (tetsudō) but were supervised by the Interior Ministry under the designation of kidō [tramways].

III. RAILWAY CONSTRUCTION AND LOCAL COMMUNITIES DURING THE EARLY TWENTIETH CENTURY

The Background and Significance of "Light Railway" Policies

The Japanese term keiben tetsudō corresponds to the English "light railway" or the German "Kleinbahn." Such "light railways" were built with lower or simpler standards than those required for the trunk lines. For example, a narrow gauge might be used, the rails themselves might be lighter and of smaller cross-section, and rail cars could be constructed more simply and on a smaller scale than in the case of the trunk lines. There were and are various types of "light railways" and it is not possible to give any universal standards or definitions that are applicable to all countries. The best we can do is give relative descriptions with respect to the standards for a given country's trunk lines. In Japan the words keiben tetsudō seem to have been first used after the mid-Meiji period (1867-1912) to indicate those rail lines whose standards of construction were lower than those officially stipulated in the laws concerning government and private railways.

Needless to say, the carrying capacity of the "light railways" was relatively low. Rails of small cross-section could not support heavy rail cars or heavy loads, and both the speed and pulling capacity of small locomotives were low. On the other hand, building, operation and maintenance expenses were small, and the selection of routes was relatively simple because of the relative flexibility of restrictions on slope and curve radius. The main reason for promoting light railways was that, in areas with relatively light traffic demand, they were economically advantageous due to their lower construction and operation costs.

Japanese policy with respect to light railways came to be based on two laws, the Keiben Tetsudōhō (Light Railway Law, promulgated in April 1910 and put into effect in August of the same year) and the Keiben Tetsudō Hojohō (Light Railway Subsidy Law, promulgated in March 1911 and put into effect in January 1912).

As a result of the nationalization of the railways carried out in 1906-07, 17 major private rail companies were purchased by the government. The remaining private rail companies numbered 23, including three that had not yet begun operations. They were typically very short lines and only four, namely the Tōbu, Chūgoku, Narita, and Nankai Lines, exceeded 50 kilometres in length. The Private Railways Law was originally aimed at the supervision of large-scale private railways which were built, together with government-run lines, as part of the trunk-line network. The conditions dictated by the law were complex and it imposed heavy and troublesome obligations on the smaller lines. After the nationalization of 1906-07, only small lines remained and only "lines aimed at transport in a single locality" could be built thereafter, in accordance with an exception (Article 1) spelt out in the Railway Nationalization Law. Policies thus became necessary to encourage the building of small local lines and set new and simpler regulations.

Railway construction was thought to be an important means for the regional development needed to raise the economic levels of agricultural towns and villages. Thus many local communities became ardently interested in such construction projects. In cases where local communities undertook rail construction with their own resources and wanted to keep capital subscriptions to a minimum, there was the possibility of building in accordance with the kidō ordinance, which was promulgated in August 1890 and had as its objective the supervision of simple "railways" (tetsudō) built mainly over existing roadways. There was complete freedom of choice with respect to rail gauge and motive power. At first, most of these railways were built for horse-drawn vehicles. Later, rails for vehicles pulled by human or electric power (the latter called romen densha) were built in accordance with

the above law. At first such railways were under the supervision of the Interior Ministry, but after 1908 they fell under the double jurisdiction of the Interior Ministry and the Railway Agency (Tetsudōin).

We cannot speak of the development of these tramways during the first decade of this century without mentioning the entrepreneur Amemiya Keijirō (1846-1911). He was a native of Yamanashi prefecture who first made a fortune by speculating in various commodities in Yokohama. Then, taking note of the profitability of railways, he became a well-known figure in the financing, planning and management of a number of standard and tramway companies, including the Kōbu Railway, the Kawagoe Railway, and Tokyo street railways. After the nationalization of standard railways in 1906-07, he took a particularly active part in making investments in local tramways, and worked to promote the introduction of steam power on the tramway lines.

Amemiya invested in and gave advice on the building of tramways in various parts of Japan, and in 1908 he combined eight 2'6"-gauge steam-driven tramway lines to form the Dai Nippon Kidō company. In a collection of memoirs entitled Accomplishments of the Past Sixty Years, Amemiya writes:

> In the present state of our nation, it is very often the case that there are large distances between rail routes and the areas which produce goods. I regret to say that transport costs between producing areas and railheads are very likely to exceed transport costs between the railheads and the markets for the goods in question. I believe that the only way to remedy this is to build light railways connecting the railheads with the producing areas.

With respect to both technology and transport functions, Amemiya's steam-driven tramway represented a pioneering effort, well in advance of the government's light railway policies.

The government did not desire to see light railways diffused throughout the country under what it considered to be the insufficient safety and operational standards of the tramway ordinance. Therefore it created

a new legal category, placing "light railways" (keiben tetsudō) in a position between that of the former "private standard railways" and the tramways.

Gotō Shinpei, who was at the time the head of the Railway Bureau, was an energetic advocate of radical changes in the trunk lines, as shown, for example, in his proposal to widen track gauges and electrify lines in the vicinity of large cities. He divided Japan's railways into three functional categories: first, "regular railways," which would in principle be government-owned and would be either trunk lines or major regional connecting lines; second, "light railways," which would serve mainly for local transport; and third, "tramways," which would serve the needs of urban transport as well as some of the transport needs in surrounding regions. The primary objective was to increase the capacities of the regular railways. Construction of "light railways" would depend mainly on private capital, although subsidies would be granted and other policies would be adopted which would encourage construction and management.

The Seiyūkai, the political party which at the time held the majority of seats in the Imperial Diet and had its base in farming and fishing villages throughout the country, adopted as one of its policies the extension of rail lines to local communities throughout Japan. In March 1910 the Seiyūkai presented to the 26th Diet session a "motion for the improvement and rapid construction of railways throughout the country" and a "motion for the improvement of harbours." According to the diary of the party's president, Hara Takashi, these represented "a policy of completing all the lines which the country required within the limit of a fair number of years." The motions were in opposition to Gotō's plan for wider gauges. Hara Takashi wrote in his diary for 24 February 1910:

> Although wider gauges might be necessary in the distant future, there is in my view no need for Japan's railroads to transport goods over long distances to the same extent as in Europe or America. Therefore . . . there is no immediate need for improvements through wider gauges. Also, since very great improvement costs would be necessary for wider gauges, it

> would be preferable [to use such funds] to extend the length of lines in various areas.

The party's attitude is thought to have been encapsulated in these words of its president, and we can see the emphasis placed on sea transport for moving large volumes of goods over great distances. The Seiyūkai members were doubtless giving attention to the possibilities for combining rail transport with coastal transport in western-type sailing ships which were at the time prospering throughout the country. Thus it was no mere coincidence that motions were introduced simultaneously for harbour improvement and for the rapid construction of new railways.

We may say that the Light Railway Law and the Light Railway Subsidy Law were Gotō's answer to the demands of local communities for the rapid construction and expansion of railways, as these demands surfaced through the advocacy of the Seiyūkai. In the thinking of Gotō, who was both politician and bureaucrat, precedence should be given to completing the trunk lines, the rail system needed for the country as a whole. Thus one should reject the notion of dissipating limited funds for investment in local lines spread throughout the country. However, it was impossible to ignore the will of the Seiyūkai and its majority in the lower house of the Diet. The Light Railway Law and the corresponding subsidy law may be seen as a means of setting up an environment which would facilitate investment by private capital in the construction of small-scale, local lines. By merely providing subsidies rather than totally financing the local lines, government expenditure on railways could be kept down.

The Light Railway Law was relatively short and concise, consisting of only eight articles. If one includes the seven applicable articles of the Private Railway Law, there were only 15 articles in all. Under the new law, licensing for "light railways" was granted in a single transaction, as opposed to the two-step procedures of the Private Railway Law, under which a provisional licence was needed before the licence itself was granted. Under the new law, work could begin immediately after permission had been granted to start

construction within a stipulated period. It was no longer necessary, as under the Private Railway Law, that a licensee be a joint-stock company, and there was no objection to construction work being undertaken in the name of an individual, or a limited or unlimited partnership. There were no gauge restrictions, while restrictions on curve radius and slope were flexible, and those on routing, stations, signs, and railcar facilities were not onerous. There were no maximum fares, and in essential cases permission could be requested for laying rails on already existing roadways. Stipulations covering the construction of each "light railway" were given in the form of a set of instructions which took into consideration the peculiarities of the line in question. It was possible for lines which had formerly been legally designated as "private railways" or "tramways" to change their status to that of "light railways."

The Light Railway Subsidy Law was aimed at railways with a 2'6" gauge and above. According to its first article, "in cases where profits in a given operating year do not reach 5 per cent of construction costs, the government will subsidize the deficit within a period of five years from the beginning of operations." A revision in 1914 extended the period of subsidy to ten years. Later, when the Light Railway Law was incorporated into the Local Railway Law, a corresponding subsidy law was set up which stipulated that subsidies would correspond to 5 per cent of construction costs within each operating year. However, there was the provision in the same Article 1 that, in cases where it exceeded 2 per cent, the amount in excess would be deducted from an additional base subsidy rate equal to 2 per cent. Thus, in certain cases, the subsidy rate was raised from 5 per cent to 7 per cent.

The Light Railway Law and the Light Railway Subsidy Law elicited, as the government had anticipated, a great response from local communities throughout the country, and were effective in promoting these communities' own railway construction plans.

From August 1910, when the Light Railway Law was put into effect, until March of the following year, 23 light railway companies were newly

licensed. The total is 50 if one includes 17 companies which had formerly been operated as "private lines," nine companies among "private lines" not yet in operation, and one tramway relicensed under the new law. Table 1 shows increases and decreases in distances covered by "light railways" and their successors, "local railways," up to 1926. We see that the licensed extensions reached a peak during the years 1911-13, declined during 1914-17, and then rose again in 1918. Rises and falls in the figures were thereafter irregular up to the beginning of the Showa era after 1926. Licensed rail length was never again to reach the peak attained during the 1911-13 period. In terms of lines opened for operation, the peak occurred in 1913-15. The amount of new track later fell, only to rise again after 1921 without surpassing the previous peak. Here we can definitely see the influence of World War I (1914-18). In contrast to the period 1911-13, licences granted after 1918 showed a great increase in the case of railroads serving large cities and mining and manufacturing areas. If we consider ordinary local railways, we see only one peak in licensing and the period of especially active promotion which the authorities had envisaged lasted continuously for a period of only three years. This is an important point to remember in considering light railway policies.

A large percentage of the newly licensed light railways selected 2'6"-gauge tracks. This was the minimum gauge which would enable the companies in question to be eligible for subsidies. These railways relied on passenger fares for the greater part of their revenue and they did not require that their freight cars be directly transferable to the government-owned railways of wider gauge.

Light railways were not only privately operated, but after 1911 certain government-owned lines also began to construct them. According to a history of Japan's railways, construction of light railways was carried out in "areas where transport conditions did not require railroads of ordinary scale and, in cases where there were no private entrepreneurs in the same area, the lines should feed into the national railways" (Nihon tetsudōshi, vol. 2, pp. 73-74). The most important feature of such railways was that routing decisions could be made

TABLE 1. Licensing and Operational Status of Light and Local Railways (Figures represent distances in kilometres)

Year	Licensed for Construction	Changes in Designation[1]	Licences Later Nullified	Licences Later Nationalized	Put Into Actual Operation[2]
1910	633.0	769.2	-	-	(374.0)
1911	1,762.0	289.1	24.4	-	143.2 (7.3)
1912	1,629.6	182.4	86.6	-	255.3
1913	1,468.0	36.4	385.5	-	521.4
1914	456.0	10.1	439.0	-	487.6
1915	136.0	-	910.9	-	469.6
1916	326.6	40.7	478.9	-	143.9 (37.1)
1917	283.3	407.6	415.9	-	91.1 (321.9)
1918	495.2	-	509.9	-	230.2
1919	1,009.5	-	194.1	-	129.4
1920	785.2	-	85.6	130.4	108.4
1921	594.3	-	59.6	-	250.6
1922	1,350.1	-	105.9	35.0	372.8
1923	954.6	-	112.3	-	487.4
1924	597.5	-	730.6	-	332.8
1925	421.2	-	260.3	23.8	330.9
1926	933.4	-	230.3	11.9	480.2

Source: Tetsudōin nenpō (1910-1915); Tetsudōin (Tetsudoshō) tetsudō tōkei shiryō (1916-26).

1. Railways redesignated as "light railways," formerly "private railways" or "tramways."

2. Figures in parentheses represent "private railways" or "tramways" which underwent a change in designation.

independently of the Railway Construction Law. Routing decisions were made within the Railway Bureau (Tetsudōin), and only budgetary allocations had to be approved by the Imperial Diet. It is not difficult to imagine how the building of light railways became involved with the interests of members of the Railway Committee and members of the lower house of the Diet. Funds budgeted for investment in nationally owned light railways greatly increased each year. Plans for such lines became a sort of "hunting ground" for parties and party members and led to the "political lines" of later years.

Light Railways as Viewed by Local Society

What was the response of the various local communities to the government's light railroad policy?

In 1913 the average construction cost per kilometre of light railway was approximately 21,000 yen in the case of the 2'6" (762 mm) gauge, or approximately 34,000 yen in the case of the 3'6" (1067 mm) gauge. Thus a small line extension of, say, 20 kilometres could be built for less than 500,000 yen. But for a local community with poor capital reserves, to raise such a sum within a short time was very difficult. Consequently, various means of lessening construction costs were explored. For example, in the case of choosing stations for connections between light railway lines and trunk lines, the majority of residents along the routes chose whatever trunk-line connecting station was nearest, rather than choosing direct links to cities. For the most part, areas along the routes of light railways fell within the sphere of influence of a city served by a trunk line. The nearby residents would often go to that city for shopping and other business. Thus one might expect that from the point of view of both railway management and the local communities, direct connections between the light railways and the central cities would be advantageous. However, in reality, in order to keep capital outlay to a minimum, it very often happened that even though the nearest station on the trunk line might be a tiny village, that station would be chosen and passengers would there have to change trains for the city of their destination. As far as possible, high-cost tunnels and long bridges were avoided.

Major types of shareholders in the private light railway companies were as follows:

1. residents living in local communities along the routes in question;
2. persons who originally lived along the route;
3. persons who had business or other interests involving the local communities along the route;
4. investors who originally had no interest in the local communities along the route.

In the case of many light railways, the first group constituted the major portion of the investors. Table 2 gives a good example of such a situation. It shows that in the case of the Shimotsui 2'6"-gauge light railway opened with a capital investment of 300,000 yen between Chayamachi (on the Uno Line of the National Railways in Okayama prefecture) and Minato-machi Shimotsui, the greater part of the shares was held by residents along the route. The fact that a rather large part of the shares was held by residents of Marugame on Shikoku island reflects the fact that these residents were opposed to the opening of the Uno-Takamatsu ferry service in 1910 and wanted to maintain the traditional Shimotsui-Marugame ferry route. Thus it was only natural that Marugame should be considered an area peripherally attached to the route in question.

TABLE 2: Distribution of Shareholders in the Shimotsui Line (as of 30 April 1912)

	Name of Locality	Number of Shareholders						Total Shares	Percentage of all shares
		100 or more	50-99	20-49	10-19	9 or less	Total		
Okayama prefecture	Shimotsui (town)	7	9	12	7	32	67	2,164	36.1
	Akasaki (village)		1	4	2	3	10	169	2.8
	Ajino (town)		2		1	11	14	167	2.8
	Oda (village)	2	2	3	14	6	27	620	10.3
	Gōnai (village)			1	3	2	6	56	0.9
	Fujito (village)		4	1	1	14	20	309	5.1
	Chaya (town)		3	3	3	21	30	310	5.2
	Kotoura (village)			1	1	9	11	90	1.5
	Nadasaki (village)		1				1	50	0.8
	Fukuda (village)			2		28	30	93	1.6
	Okayama (city)		3	2		2	7	204	3.4
	Kurashiki (town)		1				1	50	0.8
	Other places in Okayama prefecture				3	3	6	43	0.7
Kagawa pref.	Marugame (city)	1	2	11	29	71	114	1,051	17.5
	Nakatado (county)	1					1	420	7.0
	Other places in Kagawa prefecture		1	1	2		4	114	1.9
Osaka (city)				1			1	40	0.7
Nishikamo county (Aichi prefecture)			1				1	50	0.8
Total		11	30	42	66	202	351	6,000	100

Source: First Report of the Shimotsui Light Railway Company.

It is also worthwhile to note the large number of very small shareholders. Among a total of 351 shareholders, 202 held fewer than nine shares.

This wide dispersal of shares was a common feature of most private or light railways at the time, and it was not at all unusual to find shareholders with only one or two shares. There were cases in which funds were raised through an appeal to community spirit, when whole towns or villages would be assessed on the basis of a certain amount to be paid by each individual resident in accordance with the size of his assets. Generally speaking, railway investments were undertaken in the expectation of dividends, but not so in the case of the Shimotsui Line, where fund-raising seems to have been a matter of a community assessing and collecting money from its own members rather than attracting ordinary investment.

The types of shareholders in newly established light railway companies varied greatly depending on the nature of the local societies. Since the areas through which the lines ran were mainly agricultural, large-scale landowners constituted a great proportion of the shareholders. For many large-scale landowners who during the Meiji era (1868-1912) had consolidated agricultural holdings and accumulated capital, light railways were more than an investment per se. Rather, they perceived such construction as a sort of service to the local communities in repayment for benefits received at an earlier date.

But we must not overlook the fact that many large-scale landowners resident in local communities also sought indirect benefits through facilitating the transport of goods connected with the businesses they managed. Many light railways had capital connections with specific mines or other industries, a characteristic which became especially marked after World War I. There were cases of railways being planned by long-established merchants and entrepreneurs, as in the case of the pottery and ceramics industry in the Tōnō region of Gifu prefecture. However, such cases formed a minority in the context of the country as a whole.

In the second group mentioned above, there were many large shareholders active in central political and financial circles who had grown up in the areas through which the lines ran. Among this group there were few directly concerned with management, but such investors included persons of renown who were effective in carrying out railway promotional movements aimed at regulatory agencies and political circles.

The third group had commercial relations with the local communities along the lines and were the object of friendly persuasion or forceful demands from the local communities with a view to providing funds. Their numbers were relatively small and they were not concerned with management.

The fourth group was composed mainly of investors from Tokyo and Osaka who invested in light railways with the clear objective of profit. The motives for their investment varied, but some of the relatively common motives can be seen among the following sub-groups.

One sub-group comprised men who played a consultative role in the construction plans for light railways and tramways. Major figures among them were the head of the Dai Nippon Kidō company, Amemiya Keijirō, and his successor Amemiya Wataru. Also worthy of special mention is Saiga Tōkichi, who led the Osaka-based Saiga Shōkai. In addition to being involved with the management of light railways and tramways in various parts of the country, they were also manufacturers and importers of rail cars, electric generators and other equipment. It could be said that through their participation in the construction plans for light railways and tramways, they were able also to promote the sale of products in which they dealt. Amemiya was primarily concerned with steam-driven locomotives and Saiga with electric railways. Amemiya's business ventures were especially large-scale, and both as a tramway manager and as a rail car manufacturer he left a great mark on the history of Japan's local railways.

Another sub-group was composed of investors who had relatively little experience in the railway business and who often turned out to be mere

speculators, causing railway plans to end in failure. Many were attracted to investment through visits from persons of importance in the local communities, and such visits were often facilitated through family ties. As a result of such visits, promises of investment would be made. Such investors often played the most active role in planning railways to serve famous shrines and temples or other tourist spots. However, they were likely to drop out in cases where plans did not proceed smoothly, and in extreme cases they might even sell off already purchased rails or cars to reap profits from inflation caused by war or other factors. From the point of view of local communities, the existence of such investors could be beneficial, but at the same time there was the danger that one false step could cause an entire plan to fail.

With only a few exceptions, investment from central capitalist circles, such as the zaibatsu, was not seen in the case of light railways. (The same had also been true in the case of "private railways" before the nationalization policies.) In the case of railways near large cities, one might note the growth of railway capitalists and managers of a sort not seen in the case of local light railways and tramways which were too small in scale and had profit rates too small to encourage the growth of such railway capitalists.

As already stated, construction plans for local light railways reached a peak between 1911 and 1913, after which time the number of licences decreased. One reason for this subsequent decline was the outbreak of World War I, which was accompanied by a stoppage in the importation of rails and locomotives and a general rise in the price of all steel products. The demand for capital rose, along with a tendency to avoid investment in enterprises with low profit rates (such as light railways). However, we may find other reasons in such factors as government policy on light railways and the internal composition of the light railway companies themselves.

In spite of government subsidies, operation of light railways was difficult. In the case of light railways built with capital collected

from relatively poor local communities, there was a strong tendency to underestimate construction expenses and to set capital outlays at an unrealistically low figure. Promoters, who were well aware of the difficulty of raising shares, tended, either consciously or unconsciously, to give low estimates of capital outlay. It was not uncommon for price rises in various types of machinery and equipment to exceed original estimates, and it often happened that there were insufficient funds to make up this difference. Therefore many light railways were obliged from the beginning to obtain large loans, and after the start of operations they were pressured by the obligation to repay interest. If we look at the income and expenditure records of light railway enterprises, we see that in many cases the amount of interest which had to be paid was of almost equal magnitude to the government subsidies received. Operational balances alone often showed a certain amount of profit, but there might be an overall loss when one took into account interest payments, which might exceed profits. Thus it is no exaggeration to say that the role of subsidies was to provide the funds for interest payments. Dividends often remained unpaid or were paid only on preferential shares. The capital invested by local communities in light railways often lost its convertibility, to say nothing of failing to produce a profit. Even in the case of "light" railways, these were still in general an excessive burden for local communities to bear with their limited resources.

The fact that the National Railways began to construct light railway lines is thought to have put a brake on the enthusiasm of local communities to build such lines wholly by their own efforts. If the residents of local communities could succeed, through political activity aimed at Diet members elected from their areas, in attracting government-owned light railways, they would be spared the pains of raising funds as well as subsequent difficulties with management. They would be able to enjoy, as railway users, the benefits of a new line. Light railway construction gradually tended to rely more and more on the government and, from the viewpoint of local communities, this must have seemed a natural course of events.

CONCLUSION

In April 1922 the Railway Construction Law was completely revised, and the National Railways proclaimed that construction would thereafter be concentrated on local lines rather than on trunk lines. This was a natural development arising from conflicts and inconsistencies in previous light railway policy since the latter part of the Meiji era, and it was a move toward the sort of "improvement" sought by local communities throughout Japan. The new policy did, however, give rise to new problems by slowing down, in relative terms, improvements in the trunk lines.

In regard to railway construction following the revised law of 1922, I will elsewhere describe how local communities introduced new railway technology.